UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,671	11/14/2006	Joachim Lohr	L7725.06114	8182

52989 7590 09/01/2009

Dickinson Wright PLLC
James E. Ledbetter, Esq.
International Square
1875 Eye Street, N.W., Suite 1200
Washington, DC 20006

EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2416	

MAIL DATE	DELIVERY MODE
09/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,671	LOHR ET AL.	
	Examiner	Art Unit	
	HABTE MERED	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/22/09*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *79,81-100 and 102-119* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *79, 81-100, and 102-119* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 5/22/09 has been entered and fully considered.

2. Claims 79, 81-100, and 102-119 are currently pending. Claims 80 and 101 are cancelled. Claims 79, 100, 114, 116, 118, and 119 are the base independent claims. Only independent claim 100 is amended. Dependent claims 83, 84, and 87 are currently amended.

Response to Arguments

3. Applicant's arguments, see Remarks, filed on 5/22/09, with respect to the rejection(s) of independent claim(s) under U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Jorgensen'805.

Examiner agreed in the Applicant initiated interview conducted on 6/1/09 that the previously cited prior arts failed to adequately disclose the claimed limitation requiring including flow identification in the request sent from a mobile to a base station. However, Examiner indicated that after a limited search a new prior art (i.e. Jorgensen'805) was identified adequately addressing the claimed limitation requiring including flow identification in the request sent from a mobile to a base station. Examiner agreed to hold on acting on the claimed amendments to allow Applicant to amend the existing claims by 8/18/09. Applicant has not filed an amendment to the

claims filed on 5/22/09 by 8/18/09 and consequently Examiner has issued the instant Office Action applying Jorgensen'805 to the claims filed on 5/22/09.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 79, 81, 82, 86, 88-97, 100, 102, 103, 106-111 and 118** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al (US Pub. No. 20050249133) in view of Jorgensen (US Pub. No. 2007/0073805) and Schultz (WIPO WO 01/63855 A1).

Regarding **claim 79**, Terry'133 discloses a method for scheduling transmissions of a plurality of mobile terminals **(i.e. Fig. 1 WTRU 100)** in a mobile communication system **(i.e. Fig. 1)**, wherein each mobile terminal transmits data of at least one flow **(mac-d flows – see paragraph 23)** being mapped on a dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** to a base station **(Fig. 1 Node B 200)**, the method comprising:

receiving at least one scheduling request **(i.e. EU rate request/assignment paragraph 19)** from at least one of the mobile terminals **(i.e. Fig. 1 WTRU 100)** at the base station **(Fig. 1 Node B 200)**, wherein the scheduling request requests allocation of

an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** for transmission on the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** to the mobile terminal transmitting the respective scheduling request **(see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

scheduling by the base station **(i.e. Node B)** uplink resources **(i.e. TFCS)** for transmissions of said mobile terminals on the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** based on the QoS attributes (i.e. QoS as priority classes see paragraphs 22 and 30) related to the flow **(Terry'133 discloses in paragraphs 22 and 30 that Node B schedules uplink resources TFCS (paragraphs 19-20) for use by mobiles for uplink transmissions)**.

Terry'133 fails to disclose that the scheduling request comprises an identifier identifying one of the pluralities of flows and scheduling by the base station identified by the identifier.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling by the base station identified by the identifier **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482)**.

In view of the above, having the method of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Terry'133, however, fails to expressively disclose receiving at the base station from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses receiving at the base station **(See Figure 2, Node B)** from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the method of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 81**, Terry'133 discloses a method, wherein the flow has a priority. **(See Paragraphs 6 and 25 each mac-d flow has a priority derived from its corresponding logical channel priorities and priority handling entity)**.

Regarding **claim 82** Terry'133 discloses a method wherein the flow is multiplexed on a MAC-d flow. **(See Terry'133 paragraph 30 and Fig. 3 and Schultz'855 Fig. 5)**

Regarding **claim 86**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the scheduling request received by the base station is transmitted via Medium Access Control (MAC) control signaling **(See Schultz'855 Figure 2 where the Mac-d has a dedicated control channel and the schedule request is transmitted from the UE to Node B using similar mechanism shown in Figure 3)**.

Regarding **claim 88**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes is received from a network element **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** terminating the radio resource control signaling of at least one of the mobile terminals **(Schultz'855 shows in Figures 2 shows the RNC terminating the UE control message and Schultz'855 in Figure 3 shows the control message is an RRC signaling)**.

Regarding **claim 89**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes are included in a configuration message **(Schultz'855 on page 7, Lines 15-22 shows that the QoS is assigned when the RABs are configured by the RNC and necessitate use of configuration message)**.

Regarding **claim 90**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method wherein the QoS attributes is received by the base station from the network element **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)**, terminating the radio resource control signaling in a radio link setup message or a radio link reconfiguration message **(Schultz'855 on page 7, Lines 15-22 and last paragraph of page 27 shows that the QoS is assigned when the RABs are**

configured and reconfigured by the RNC and necessitate use of configuration and reconfiguration message).

Regarding **claim 91**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes is received from a serving radio network controller **(See Schultz'855 on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 serving RNC 140 passes QoS parameters. See also Fig. 8 block 805).**

Regarding **claim 92,** the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the flow is associated to at least one radio bearer between the mobile terminal and the network element terminating the radio resource control signaling and the method further comprises mapping QoS attributes of a radio bearer to the QoS attributes of the flow**. (Schultz'855 on page 28 in the last paragraph teaches mapping of radio bearer's QoS to the QoS flows as further shown in Figure 7).**

Regarding **claim 93**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the mapping of the QoS attributes comprises taking into account uplink delays on the interface between the base station and the network element terminating the radio resource control signaling **(Schultz'855 on page 14, lines 10-15 teaches taking into consideration such delays as a QoS parameter).**

Regarding **claim 94**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the flow is a MAC-d flow or a priority queue of the mobile terminal **(Terry'133 teaches in paragraphs 6 and 25 that the flow can be a priority queue or a Mac-d flow)**.

Regarding **claim 95**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the scheduling request comprises an identifier identifying the highest priority flow **(Jorgensen'805 shows the scheduling request highest priority flow in Fig 12 K element 1244b).**

Regarding **claim 96**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the highest priority flow has the highest QoS demands **(Jorgensen'805 shows the scheduling request highest priority flow in Fig 12 K element 1244b).**

Regarding **claim 97**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method, wherein the QoS attributes comprises at least one of a transfer delay, a guaranteed bit rate, a traffic handling priority, a service type identification, a traffic class and a reordering release timer of the reordering buffer in the Medium Access Control (MAC) entity **(Terry'133 in paragraph 19 shows data rate which is a guaranteed bit rate is a QoS attribute)**.

Regarding **claim 100**, Terry'133 discloses

A base station **(Fig. 1 Node B 200)** for scheduling a plurality of transmissions of a plurality of mobile terminals **(i.e. Fig. 1 WTRU 100)** in a mobile communication system **(i.e. Fig. 1)**, wherein each mobile terminal transmits data of at least one flow **(mac-d flows – see paragraph 23)** being mapped on a dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** to a base station **(Fig. 1 Node B 200)**, said base station comprising:

a communication section **(i.e. Fig. 1 Uplink EU signaling Channel receiver 104)** adapted for receiving a scheduling request **(i.e. EU rate request/assignment paragraph 19)** from at least one of the mobile terminals **(i.e. Fig. 1 WTRU 100)**, wherein the scheduling request requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** for transmission on the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** to the mobile terminal transmitting the respective scheduling request **(see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

a scheduling section **(Fig. 4 scheduler 222)** adapted to schedule uplink resources **(i.e. TFCS)** for transmissions of said mobile terminals on the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** based on the QoS attributes **(i.e. QoS as priority classes see paragraphs 22 and 30)** related to the flow **(Terry'133 discloses in paragraphs 22 and 30 that Node B schedules uplink resources TFCS (paragraphs 19-20) for use by mobiles for uplink transmissions)**.

Terry'133 fails to disclose that the scheduling request comprises an identifier identifying one of the pluralities of flows and scheduling by the base station identified by the identifier.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling by the base station identified by the identifier **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482)**.

In view of the above, having the base station of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the base station of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator of the base station optimizing end-user quality of service while being aware of each flow/application.

Terry'133, however, fails to expressively disclose a base station with a communication section adopted to receive from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses a base station with a **(See Figure 2, Node B)** a communication section adopted to receive from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the base station of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the base station of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS requirements when multiplexing more than one incoming data flow onto a single output channel.

Regarding **claim 102**, it is noted that the limitations of claim 102 corresponds to that of claim 81 as discussed above, please see the Examiner's comments with respect to claim 81 as set forth in the rejection above.

Regarding **claim 103**, it is noted that the limitations of claim 103 corresponds to that of claim 82 as discussed above, please see the Examiner's comments with respect to claim 82 as set forth in the rejection above.

Regarding **claim 106**, it is noted that the limitations of claim106 corresponds to that of claim 88 as discussed above, please see the Examiner's comments with respect to claim 88 as set forth in the rejection above.

Regarding **claim 107**, it is noted that the limitations of claim107 corresponds to that of claim 89 as discussed above, please see the Examiner's comments with respect to claim 89 as set forth in the rejection above.

Regarding **claim 108**, it is noted that the limitations of claim108 corresponds to that of claim 91 as discussed above, please see the Examiner's comments with respect to claim 91 as set forth in the rejection above.

Regarding **claim 109**, it is noted that the limitations of claim109 corresponds to that of claim 95 as discussed above, please see the Examiner's comments with respect to claim 95 as set forth in the rejection above.

Regarding **claim 110**, it is noted that the limitations of claim110 corresponds to that of claim 96 as discussed above, please see the Examiner's comments with respect to claim 96 as set forth in the rejection above.

Regarding **claim 111**, it is noted that the limitations of claim111 corresponds to that of claim 97 as discussed above, please see the Examiner's comments with respect to claim 97 as set forth in the rejection above.

Regarding **Claim 118**, Terry'133 discloses a computer readable storage medium for storing instructions that when executed by a processor of a base station **(Fig. 1 Node B 200)** in a mobile communication system cause the base station to schedule transmissions by a plurality of mobile terminals **(i.e. Fig. 1 WTRU 100)**, wherein each mobile terminal transmits data of at least one flow **(mac-d flows – see paragraph 23)** mapped on a dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)**, by:

receiving at least one scheduling request **(i.e. EU rate request/assignment paragraph 19)** from at least one of the mobile terminals **(i.e. Fig. 1 WTRU 100)** at the base station **(Fig. 1 Node B 200)**, wherein the scheduling request requests allocation of an uplink resource **(i.e. E-DCH transport format combination set (TFCS) subset – see paragraph 20)** for transmission on the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** to the mobile terminal transmitting the respective scheduling request **(see paragraphs 19-21 where Terry'133 discloses EU rate request from mobile to base station for resources on uplink E-DCH channel)**, and

scheduling by the base station **(i.e. Node B)** uplink resources **(i.e. TFCS)** for transmissions of said mobile terminals on the dedicated uplink channel **(i.e. Fig. 1 E-DCH 102)** based on the QoS attributes (i.e. QoS as priority classes see paragraphs 22 and 30) related to the flow **(Terry'133 discloses in paragraphs 22 and 30 that Node B schedules uplink resources TFCS (paragraphs 19-20) for use by mobiles for uplink transmissions)**.

Terry'133 fails to disclose that the scheduling request comprises an identifier identifying one of the pluralities of flows and scheduling by the base station identified by the identifier.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses that the scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the pluralities of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** and scheduling by the base station identified by the identifier **(see uplink and downlink frames transmitted using flow id in Fig. 13 as detailed in paragraph 482)**.

In view of the above, having the medium of Terry'133 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of Terry'133 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Terry'133, however, fails to expressively disclose receiving at the base station from a radio network (RNC) controller Quality of Service (QoS) attributes of a plurality of flows to be multiplexed onto a single dedicated uplink channel by a mobile terminal. Terry'133 discloses in paragraph 29 that the combination of MAC-d flows multiplexed in one MAC-e PDU in the mobile is determined by the RNC 300

However, the above mentioned claimed limitations are well known in the art as evidenced by Schultz'855. In particular, Schultz'855 discloses receiving at the base station **(See Figure 2, Node B)** from a radio network (RNC) controller **(See on page 7, Lines 19-27 and Page 14, Lines 10-15 how Fig. 2 RNC 140 passes QoS parameters. See also Fig. 8 block 805)** QoS attributes of a plurality of flows **(i.e. each RAB in Figure 7 has a unique QoS known at setup by Node-B as illustrated on page 28, Lines 19-22)** to be multiplexed **(i.e. the flows on the transport channels are muxed at the UE)** onto a single dedicated uplink channel **(i.e. physical channel DCH of Figure 7)** by a mobile terminal **(UE) (See also pages 6 and 7 discussion with regards to Figure 2 and pages 27-29 for discussion with regards to Figure 7)**.

In view of the above, having the medium of Terry'133 and then given the well established teaching of Schultz'855, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of Terry'133 as taught by Schultz'855, since Schultz'855 clearly states on page 3, Lines 19-22 that the modification results in ability to handle specified guaranteed bandwidth and QoS requirements when multiplexing more than one incoming data flow onto a single output channel.

6. **Claims 83-84, 99 and 113** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805, and Schultz'855 as applied to claims 79 and 100 above, and further in view of Lucent-3GPP ("Scheduled and Autonomous Mode Operation for the Enhanced Uplink", 2003, 3GPP TSG RAN WG1#31 R1-03-0284).

Regarding **claim 83**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method wherein the QoS attributes comprises a transmission mode associated with the data of the flow.

Lucent-3GPP discloses a method wherein the QoS information comprises a transmission mode associated with the data flow. **(In section 2 and 4 it is shown transmission mode has to do with a choice of scheduling and if Node B controlled scheduling then the QoS info is buffer status, power margin and channel quality)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment.

Regarding **claim 84**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, wherein the transmission mode indicates whether data of the flow is transmitted applying an additional gain factor.

Lucent-3GPP discloses a method, wherein the transmission mode indicates whether data of the flow is transmitted applying an additional gain factor. **(Lucent-3GPP teaches a transmission mode where the flow is transmitted applying an additional gain factor in bullet item 4 of page 5)**

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment and ability to do H-ARQ with greater flexibility as stated in bullet item 3 of page 5 in Lucent-3GPP's disclosure.

Regarding **claim 99**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fails to disclose a method wherein further comprising considering a predetermined gain factor to be additionally applied to the transmission when

scheduling the mobile terminal from which the scheduling request has been received at the base station.

Lucent-3GPP discloses a method, wherein further comprising considering a predetermined gain factor to be additionally applied to the transmission when scheduling the mobile terminal from which the scheduling request has been received at the base station **(Lucent-3GPP teaches a transmission mode where the flow is transmitted applying an additional gain factor in bullet item 4 of page 5 and it is predetermined to meet the need of already known uplink transport channel power requirement).**

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Lucent-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Lucent-3GPP, since Lucent-3GPP clearly states in Section 3 that the modification results in ability to have co-existence of scheduled and autonomous transmission by a user equipment and ability to do H-ARQ with greater flexibility as stated in bullet item 3 of page 5 in Lucent-3GPP's disclosure.

Regarding **claim 113**, it is noted that the limitations of claim113 corresponds to that of claim 99 as discussed above, please see the Examiner's comments with respect to claim 99 as set forth in the rejection above.

7. **Claims 85, 87, 104 and 105** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805 and Schultz'855 as applied to claim 79 above, and further in view of Fujitsu-3GPP ("Signaling framework for enhanced uplink scheduling", August 2004, 3GPP TSG RAN1 and RAN2 meetings).

Regarding **claim 85**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, wherein the scheduling request further comprises information on buffer occupancy at the mobile terminal and on a transmission power at the mobile terminal.

Fujitsu-3GPP discloses a method, wherein the scheduling request further comprises information on buffer occupancy at the mobile terminal and on a transmission power at the mobile terminal. **(Fujitsu-3GPP shows Scheduling Information (SI) request with buffer occupancy and transmit power from the UE to Node-B as shown in Figure 1 and item 1 under Uplink Signaling on page 2)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Fujitsu-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by LFujitsu-3GPP, since Fujitsu-3GPP clearly states in Section 1 that the modification results in a flexible signaling framework.

Regarding **claim 87**, the combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a method, further comprising transmitting a scheduling assignment from the base station to at least one of the mobile terminals from which a scheduling request has been received at the base station, wherein the scheduling assignment indicates an uplink resource allocated to the mobile terminal on the dedicated uplink channel.

Fujitsu-3GPP discloses a method, further comprising transmitting a scheduling assignment **(i.e. SAs in Figure 1)** from the base station **(i.e. Node B)** to at least one of the mobile terminals **(UE of Figure 1)** from which a scheduling request has been received at the base station, wherein the scheduling assignment indicates a uplink resource allocated **(rate, power, time, bandwidth)** to the mobile terminal on the dedicated uplink channel **(See items 1 and 2 on page 3 regarding downlink Schedule Assignment)**.

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Fujitsu-3GPP, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Fujitsu-3GPP, since Fujitsu-3GPP clearly states in Section 1 that the modification results in a flexible signaling framework.

Regarding **claim 104**, it is noted that the limitations of claim 104 corresponds to that of claim 85 as discussed above, please see the Examiner's comments with respect to claim 85 as set forth in the rejection above.

Regarding **claim 105**, it is noted that the limitations of claim105 corresponds to that of claim 87 as discussed above, please see the Examiner's comments with respect to claim 87 as set forth in the rejection above.

8. **Claims 98 and 112** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry'133 in view of Jorgensen'805 and Schultz'855 as applied to claim 79 above, and further in view of Cheng et al (US Pub. No 2004/0228313 A1).

Regarding **claim 98**, the combination of Terry'133, Jorgensen'805, and Schultz'855 disclose a method using a scheduling request. **(See Terry'133 paragraph 19)**

The combination of Terry'133, Jorgensen'805, and Schultz'855 fail to disclose a service type indicator indicating a transmission of data of the flow carrying a delay-critical service on the dedicated uplink channel.

Cheng'313 discloses a service type indicator indicating a transmission of data of the flow carrying a delay-critical service on the dedicated uplink channel **(Cheng"313 in paragraph 28 and Figure 2 indicates a service type indicator indicating a**

transmission of data of the flow carrying a delay-critical service such as video conference on the uplink).

In view of the above, having the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 and then given the well established teaching of Cheng'313, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Terry'133, Jorgensen'805, and Schultz'855 as taught by Cheng'313, since Cheng'313 clearly states in paragraphs 11 and 12 that the modification results in a flexible signaling framework to map data for uplink transmission.

Regarding **claim 112**, it is noted that the limitations of claim112 corresponds to that of claim 98 as discussed above, please see the Examiner's comments with respect to claim 98 as set forth in the rejection above.

9. **Claims 114-116, 117, and 119** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng'313 in view of Jorgensen'805.

Regarding **claim 114**, Cheng'313 discloses a method for transmitting data in a mobile communication system **(See Figs. 2 and 4)**, the method comprising:

transmitting from a mobile terminal **(i.e. UE 105)** to a base station **(i.e. Node B)** a scheduling request (**see signaling request in paragraph 49)** and requests allocation of an uplink resource for transmission on the dedicated uplink channel to the mobile

terminal transmitting the respective scheduling request **(See paragraph 49 where Cheng'313 discloses queue length, delay and rate allocation request from the mobile to Node B)**,

receiving at the mobile terminal from the base station a scheduling assignment **(downlink schedule notify in paragraph 49)** considering the QoS information related to the identified flow **(see paragraphs 12, 28 and 49 Cheng'313 the UE receiving signal from Node B containing transmission parameter for scheduling based on QoS info)**,

multiplexing data of the plurality of flows to the dedicated uplink channel **(See paragraph 29)**, and receiving at the mobile terminal from the base station a scheduling assignment **(See paragraph 28)** considering the QoS information related to the identified flow, multiplexing data of the plurality of flows **(i.e. Mac-d flows of Figure 4)** to the dedicated uplink channel **(Figure 4 – EU-DCH)**, and transmitting data dedicated uplink channel **(Figure 4 – EU-DCH)** according to the scheduling assignment **(In Figure 4 the mac entity of the UE is shown performing transmitting data according to the scheduling assignment)**.

Cheng'313 fails to disclose a scheduling request wherein the scheduling request comprises an identifier identifying one of the plurality of flows to be multiplexed onto a single dedicated uplink channel and wherein the flow identifier identifies Quality of Service (QoS) attributes related to the identified flow.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses a scheduling

request **(i.e. reservation request block – RRBs in Fig. 12K)** wherein the scheduling request comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the plurality of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** to be multiplexed **(Fig. 12F)** onto a single dedicated uplink channel **(i.e. reverse link – see paragraphs 463-465** and wherein the flow identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifies Quality of Service (QoS) attributes **(i.e. Fig. 12 F 1244a,b QoS and priority of IP flow)** related to the identified flow**(i.e. Fig. 12K – 1234c IP-flow identifier - see paragraphs 463-465)**.

In view of the above, having the method of Cheng'313 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of cheng'313 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Regarding **claim 115**, the combination of Cheng'313 and Jorgensen'805 discloses a method, further comprising receiving QoS attributes from a network element **(i.e. Cheng'313 Node B or base station as indicated in paragraphs 27 and 28)** terminating the radio resource control signaling **(Cheng'313 RRC signaling used as indicated in paragraph 53)** of the mobile terminal at the mobile terminal **(The Node B sends schedule assignments with QoS parameters and Node B terminates the**

mobiles RRC signaling emanating from MAC-EU 340 of Cheng'313 Figure 3 as discussed in Cheng'313 paragraph 27, 28 and 53.)

Regarding **claim 116**, Cheng'313 discloses a mobile terminal **(i.e. Fig. 3 UE 105)** for transmitting data in a mobile communication system **(See Figs. 2 and 4)**, the method comprising:

transmitting section operable to transmit **(i.e. UE 105 is capable of transmitting)** to a base station **(i.e. Node B)** a scheduling request (**see signaling request in paragraph 49)** and requests allocation of an uplink resource for transmission on the dedicated uplink channel to the mobile terminal transmitting the respective scheduling request **(See paragraph 49 where Cheng'313 discloses queue length, delay and rate allocation request from the mobile to Node B)**,

a receiving section operable to receive from the base station a scheduling assignment **(i.e. downlink schedule notify in paragraph 49)** considering the QoS attributes related to the identified flow **(see paragraphs 12, 28 and 49 Cheng'313 the UE receiving signal from Node B containing transmission parameter for scheduling based on QoS info)**, and

a multiplexer **(i.e. Figure 3. element 320 – mac-d)** operable to multiplex data of the plurality of flows to the dedicated uplink channel **(i.e. DCH of Figure 3 or EUDCh of Figure 4)**,

wherein the transmitting section is further operable to transmit data on the dedicated uplink channel **(Figure 4 – EU-DCH)** according to the scheduling assignment

(i.e. according to schedule mode of Figure 4. In Paragraphs 39-41 Cheng'313 shows how the MAC-D multiplexed the Mac-d flows and in paragraph 29 discusses the scheduling assignment).

Cheng'313 fails to disclose a scheduling request wherein the scheduling request comprises an identifier identifying one of the plurality of flows to be multiplexed onto a single dedicated uplink channel and wherein the flow identifier identifies Quality of Service (QoS) attributes related to the identified flow.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses a scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** wherein the scheduling request comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the plurality of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** to be multiplexed **(Fig. 12F)** onto a single dedicated uplink channel **(i.e. reverse link – see paragraphs 463-465** and wherein the flow identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifies Quality of Service (QoS) attributes **(i.e. Fig. 12 F 1244a,b QoS and priority of IP flow)** related to the identified flow**(i.e. Fig. 12K – 1234c IP-flow identifier - see paragraphs 463-465)**.

In view of the above, having the mobile of Cheng'313 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the mobile of Cheng as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40

that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Regarding **claim 117**, it is noted that the limitations of claim117 corresponds to that of claim 115 as discussed above, please see the Examiner's comments with respect to claim 115 as set forth in the rejection above.

Regarding **claim 119,** Cheng'313 discloses a computer readable storage medium for storing instructions that when executed by a processor cause a mobile terminal **(i.e. UE 105 of Fig. 3)** to transmit data in a mobile communication comprising system **(See Figs 3 and 4)**, by:

transmitting from the mobile terminal **(i.e. UE 105)** to a base station **(i.e. Node B)** a scheduling request **(see signaling request in paragraph 49)** and requests allocation of an uplink resource for transmission on the dedicated uplink channel to the mobile terminal transmitting the respective scheduling request **(See paragraph 49 where Cheng'313 discloses queue length, delay and rate allocation request from the mobile to Node B)**,

receiving at the mobile terminal from the base station a scheduling assignment **(downlink schedule notify in paragraph 49)** considering the QoS information related to the identified flow **(see paragraphs 12, 28 and 49 Cheng'313 the UE receiving signal from Node B containing transmission parameter for scheduling based on QoS info)**,

multiplexing data of the plurality of flows to the dedicated uplink channel **(See paragraph 29)**, and receiving at the mobile terminal from the base station a scheduling assignment **(See paragraph 28)** considering the QoS information related to the identified flow **(in paragraph 28 Cheng'313 discloses UE 105 receiving from Node B QoS parameters)**,

multiplexing data of the plurality of flows **(i.e. Mac-d flows of Figure 4)** to the dedicated uplink channel **(Figure 4 – EU-DCH)**, and

transmitting data dedicated uplink channel **(Figure 4 – EU-DCH)** according to the scheduling assignment **(In Figure 4 the mac entity of the UE is shown performing transmitting data according to the scheduling assignment)**.

Cheng'313 fails to disclose a scheduling request wherein the scheduling request comprises an identifier identifying one of the plurality of flows to be multiplexed onto a single dedicated uplink channel and wherein the flow identifier identifies Quality of Service (QoS) attributes related to the identified flow.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jorgensen'805. In particular, Jorgensen'805 discloses a scheduling request **(i.e. reservation request block – RRBs in Fig. 12K)** wherein the scheduling request comprises an identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifying one of the plurality of flows **(Fig. 12F shows multiple Flows ID multiplexed. See also Paragraphs 463-465)** to be multiplexed **(Fig. 12F)** onto a single dedicated uplink channel **(i.e. reverse link – see paragraphs 463-465** and wherein the flow identifier **(i.e. Fig. 12K – 1234c IP-flow identifier)** identifies Quality of Service (QoS) attributes

(i.e. Fig. 12 F 1244a,b QoS and priority of IP flow) related to the identified flow**(i.e. Fig. 12K – 1234c IP-flow identifier - see paragraphs 463-465)**.

In view of the above, having the medium of Cheng'313 and then given the well established teaching of Jorgensen'805, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of cheng'313 as taught by Jorgensen'805, since Jorgensen'805 clearly states in paragraph 40 that the modification results in the resource allocator optimizes end-user quality of service while being aware of each flow/application.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Habte Mered/
Examiner, Art Unit 2416
8-29-09

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2416